REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 10, 26, 35, and 74 have been canceled. Claims 1-9, 11-25, 27-29, 31-34, 36-38, 40-41, 43-70, and 72 are pending, of which claims 1, 8-9, 11-12, 29, 38, 41, 45-48, 52-54, 56, and 70 have been amended.

35 U.S.C. §103 Claim Rejections

A.   Claims 1-4, 7, 12-14, 19-20, 23, 28-29, 37-38, 40-41, 43-44, 49-51, 55-57, 59-60, 65, 69-70, 72, and 74 are rejected under 35 U.S.C. §103(a) for obviousness over U.S. Patent No. 6,219,716 to Kumaki (hereinafter, "Kumaki") in view of U.S. Patent No. 6,253,264 to Sebastian (hereinafter, "Sebastian"), and further in view of Japanese Patent No. JP 10283280A to Kawakita (hereinafter, Kawakita) (*Office Action* p.2). Applicant respectfully traverses the rejection.

B.   Claims 8-10, 24-26, 35, 52-53, and 66-67 are rejected under 35 U.S.C. §103(a) for obviousness over Kumaki in view of Sebastian and Kawakita, and further in view of U.S. Patent No. 6,420,980 to Ejima (hereinafter, "Ejima") (*Office Action* p.8). Applicant respectfully traverses the rejection.

C.   Claims 11, 27, 36, 54, 58, and 68 are rejected under 35 U.S.C. §103(a) for obviousness over Kumaki in view of Sebastian and Kawakita, and further in view of U.S. Patent No. 5,023,869 to Grover et al. (hereinafter, "Grover") (*Office Action* p.9). Applicant respectfully traverses the rejection.

D.   Claims 5-6, 15-18, 21-22, 31-34, 45-48, and 61-64 are rejected under 35 U.S.C. §103(a) for obviousness over Kumaki in view of Sebastian and

Kawakita, and further in view of U.S. Patent No. 6,345,307 to Booth (hereinafter, "Booth") (*Office Action* p.11). Applicant respectfully traverses the rejection.

Claim 1 recites a system comprising:

a first device configured to request a data set having a plurality of individual records, the individual records having semantic information to describe data in the data set;

a second device configured to receive the request and encode the data set with a compression function to generate an encoded data set, the compression function determined from the semantic information that is common to the individual records in the data set and the encoded data set including the data without the semantic information that is common to the individual records in the data set;

the second device further configured to communicate an expansion function to the first device, the expansion function including the semantic information that is common to the individual records in the data set; and

the first device further configured to receive the encoded data set and expand the encoded data set with the expansion function, wherein individual records in the encoded data set are expanded to include the common semantic information.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest the combination of features recited in claim 1, such as "a compression function to generate an encoded data set, the compression function determined from semantic information that is common to the individual records in the data set and the encoded data set including the data without the semantic information that is common to the individual records in the data set."

The Office cites Kumaki for compressing data sets and an expansion unit for expanding the compressed data sets (*Office Action* p.3). Kumaki only

describes compressing a <u>single</u> string of byte data, but there is no indication of a compression function determined from semantic information that is common to individual records (i.e., <u>multiple</u> records), as recited in claim 1.

Kumaki col.3 describes that a string of byte data is divided into four strings (lines 1-3); that the divided strings are compressed (lines 4-5); that headers are added to the compressed strings (lines 11-15); that the compressed strings are transferred (lines 19-22); that the compressed strings are expanded back into the four divided strings (31-34); and that the divided strings are combined to recover the single uncompressed string of byte data (lines 38-41). The Office acknowledges that Kumaki only describes and shows a single string of byte data in Kumaki Fig. 4 (*Office Action* p.4).

Further, there is no indication in Kumaki as to how the divided strings are compressed. The Office recognizes that Kumaki fails to teach a compression function according to information that is common to individual records in a data set, and that Kumaki fails to teach an expansion function having the semantic information that is common to the individual records in the compressed data set (*Office Action* p.3).

The Office cites to Sebastian for determining a compression function according to the common data types in a data set, and cites to Sebastian claims 19, 20, and 49 as well as to the Title, Abstract, and col.2, lines 33-47 (*Office Action* p.5). Applicant respectfully disagrees that any of these sections of Sebastian teach or suggest a "compression function determined from semantic information that is common to the individual records in the data set" where an encoded data set

includes "the data without the semantic information that is common to the individual records in the data set", as recited in claim 1.

Initially, Sebastian does not include a claim 49. Claims 19-20 depend from claim 17 which, in combination, describes that data components of a <u>single</u> source data structure are parsed into blocks. A compression algorithm for each block is determined and then the compressed data components from the blocks are combined to form an encoded data structure. In Sebastian, the encoded data structure includes all of the compressed data components, which is contrary to an encoded data set that includes the data <u>without</u> the semantic information that is common to the individual records in the data set, as recited in claim 1.

Similarly, Sebastian describes parsing and compressing the data components from the source data structure, and that the "compressed data from the plurality of blocks are then combined into encoded data" (*Sebastian* col.2, lines 28-47). Again, the encoded data described in Sebastian includes all of the compressed data from the source data structure. In similar fashion, Kumaki also compresses all of the divided strings from the string of byte data (*Kumaki* Fig.4). Accordingly, neither Kumaki nor Sebastian teach or suggest a compression function determined from semantic information that is common to individual records, or an encoded data set that includes the data <u>without</u> the semantic information that is common to the individual records in the data set, as recited in claim 1.

The Office recognizes that both Kumaki and Sebastian fail to teach transmitting an encoded data set along with an expansion function to a destination

device, and expanding the encoded data set using the received expansion function (*Office Action* p.6). The Office then cites to Kawakita for transmitting an encoded data set along with an expansion function to a destination device (*Office Action* p.6).

However, Kumaki, Sebastian, and/or Kawakita do not teach or suggest "the expansion function including the semantic information that is common to the individual records in the data set", as recited in claim 1. Kawakita only describes that the software for decompressing the compressed data is attached to or integrated with the edited and compressed data (*Kawakita* p.2, lines 15-17). There is no indication that the software for decompressing the compressed data in Kawakita <u>includes</u> semantic information common to individual records in a data set, as recited in claim 1.

Accordingly, for at least the many reasons described above, claim 1 is allowable over the Kumaki-Sebastian-Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

<u>Claims 2-9 and 11</u> are allowable by virtue of their dependency upon independent claim 1 and are allowable over Kumaki, Sebastian, and/or Kawakita for at least the reasons described above in response to the rejection of claim 1. Additionally, some or all of claims 2-4 and 7 may be allowable over the Kumaki-Sebastian-Kawakita combination for independent reasons.

<u>Claims 5-6</u> are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Booth does not address the deficiencies of Kumaki,

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Sebastian, and/or Kawakita as described above in the response to the rejection of claim 1.

Claims 8-9 are also allowable over the Kumaki-Sebastian-Kawakita-Ejima combination because Ejima does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 1. For example, Ejima does not teach or suggest an expansion function that includes semantic information common to the individual records in the data set, as recited in claim 1.

The Office recognizes that Kumaki, Sebastian, and Kawakita do not teach removing information that is common to individual records in a data set, and also do not teach that an encoded data set includes the data without the information or semantic information that is common to the individual records in the data set (*Office Action* p.8). The Office then cites to Ejima for compression encoding by deleting the common information in a data set (*Office Action* p.9). However, Ejima only describes that common redundant bits from analog signals are removed with a common redundant bits deleter (*Ejima* col.5 line 31 to col.6, line 9). The common redundant bits removed from the analog signals in Ejima are not semantic information that describes data in a data set. As such, Ejima does not teach or suggest "the compression function determined from the semantic information that is common to the individual records in the data set" where the semantic information describes data in the data set, as recited in claim 1 (canceled claim 10 has been incorporated into pending claim 1).

Claim 11 is also allowable over the Kumaki-Sebastian-Kawakita-Grover combination because Grover does not address the deficiencies of Kumaki,

Sebastian, and/or Kawakita as described above in the response to the rejection of claim 1.

Accordingly, claims 2-9 and 11 are allowable and the §103 rejection should be withdrawn.

Claim 12 recites "a compression function determined from semantic information that is common to the individual records in the data set", "an expansion function that includes the semantic information that is common to the individual records in the data set", and that "the data set is encoded using the compression function to generate an encoded data set that includes the data without the semantic information that is common to the individual records in the data set".

As described above in the response to the rejection of claim 1, Kumaki only describes compressing a single string of byte data and Sebastian only describes that data components of a single source data structure are parsed into blocks and then compressed. There is no indication in Kumaki or Sebastian of a compression function determined from information that is common to individual records (i.e., multiple records), as recited in claim 12.

Further, Kawakita only describes that the software for decompressing the compressed data is attached to the edited and compressed data. There is no indication that the software for decompressing the compressed data in Kawakita includes semantic information common to individual records in a data set, as recited in claim 12.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest a compression function determined from semantic information that is common to individual records, or an expansion function including the semantic information that is common to the individual records in the data set. Accordingly, claim 12 is allowable over the Kumaki-Sebastian-Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 13-25 and 27-28 are allowable by virtue of their dependency upon independent claim 12 and are allowable over Kumaki, Sebastian, and/or Kawakita for at least the reasons described above in response to the rejection of claim 12. Additionally, some or all of claims 13-14, 19-20, 23, and 28 may be allowable over the Kumaki-Sebastian-Kawakita combination for independent reasons.

Claims 15-18 and 21-22 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Booth does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 12.

Claims 24-25 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Ejima does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claims 8-9 and 12.

Claim 27 is also allowable over the Kumaki-Sebastian-Kawakita-Grover combination because Grover does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 12.

Accordingly, claims 13-25 and 27-28 are allowable and the §103 rejection should be withdrawn.

Claim 29 recites "an expansion function that includes semantic information that is common to the individual records in the encoded data set, the semantic information describing the data in each of the individual records", and that the encoded data set is generated "with a compression function determined from the common semantic information such that the encoded data set includes the data without the semantic information that is common to the individual records in the encoded data set".

As described above in the response to the rejection of claim 1, Kumaki only describes compressing a single string of byte data and Sebastian only describes that data components of a single source data structure are parsed into blocks and then compressed. There is no indication in Kumaki or Sebastian of a compression function determined from common semantic information that is common to the individual records (i.e., multiple records) in the encoded data set, as recited in claim 29.

Further, Kawakita only describes that the software for decompressing the compressed data is attached to the edited and compressed data. There is no indication that the software for decompressing the compressed data in Kawakita includes semantic information common to individual records in the encoded data set, as recited in claim 29.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest a compression function determined from semantic information that is common to individual

records, or an expansion function including the semantic information that is common to the individual records in the encoded data set. Accordingly, claim 29 is allowable over the Kumaki-Sebastian-Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 31-34 and 36-37 are allowable by virtue of their dependency upon claim 29 and are allowable over Kumaki, Sebastian, and/or Kawakita for at least the reasons described above in response to the rejection of claim 29.

Claims 31-34 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Booth does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 29.

Claim 36 is also allowable over the Kumaki-Sebastian-Kawakita-Grover combination because Grover does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 29.

Accordingly, claims 31-34 and 36-37 are allowable and the §103 rejection should be withdrawn.

Claim 38 recites a method comprising:

determining a compression function for a data set having a plurality of individual records, the compression function determined from semantic information that is common to the individual records in the data set, the semantic information describing the data in each of the individual records;

generating an encoded data set using the compression function by removing the semantic information that is common to the individual records in the data set;

determining an expansion function for the encoded data set, the expansion function including the semantic information that is common to the individual records in the data set; and

transmitting the expansion function and the encoded data set to a destination device.

As described above in the response to the rejection of claim 1, Kumaki only describes compressing a single string of byte data and Sebastian only describes that data components of a single source data structure are parsed into blocks and then compressed. There is no indication in Kumaki or Sebastian of determining a compression function for a data set having a plurality of individual records (i.e., multiple records), as recited in claim 38.

Further, Kawakita only describes that the software for decompressing the compressed data is attached to the edited and compressed data. There is no indication that the software for decompressing the compressed data in Kawakita includes semantic information common to individual records in a data set, as recited in claim 38.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest a compression function determined from semantic information that is common to individual

records, or an expansion function including the semantic information that is common to the individual records in the data set. Accordingly, claim 38 is allowable over the Kumaki-Sebastian-Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 40-41 and 43-55 are allowable by virtue of their dependency upon claim 38 and are allowable over Kumaki, Sebastian, and/or Kawakita for at least the reasons described above in response to the rejection of claim 38. Additionally, some or all of claims 40-41, 43-44, 49-51, and 55 may be allowable over the Kumaki-Sebastian-Kawakita combination for independent reasons.

Claims 45-48 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Booth does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 38.

Claims 52-53 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Ejima does not address the deficiencies of Kumaki and/or Sebastian as described above in the response to the rejection of claims 8-9 and 38.

Claim 54 is also allowable over the Kumaki-Sebastian-Kawakita-Grover combination because Grover does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 38.

Accordingly, claims 40-41 and 43-55 are allowable and the §103 rejection should be withdrawn.

Claim 56 recites a method comprising:

 … a compression function including semantic information that is common to multiple records in the data set, the semantic information describing data of the data set in the multiple records;

 encoding the data set using the compression function to generate an encoded data set that includes the multiple records without the semantic information that is common to the multiple records in the encoded data set;

 … the expansion function including the semantic information that is common to the multiple records in the data set; and …

As described above in the response to the rejection of claim 1, Kumaki only describes compressing a single string of byte data and Sebastian only describes that data components of a single source data structure are parsed into blocks and then compressed. There is no indication in Kumaki or Sebastian of a compression function including semantic information that is common to multiple records in a data set, as recited in claim 56.

Further, Kawakita only describes that the software for decompressing the compressed data is attached to the edited and compressed data. There is no indication that the software for decompressing the compressed data in Kawakita includes the semantic information common to the multiple records in the data set, as recited in claim 56.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest a compression function that includes semantic information that is common to multiple records, or an expansion function including the semantic information that is common to the multiple records. Accordingly, claim 56 is allowable over the Kumaki-Sebastian-Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 57-69 are allowable by virtue of their dependency upon claim 56 and are allowable over Kumaki, Sebastian, and/or Kawakita for at least the reasons described above in response to the rejection of claim 56. Additionally, some or all of claims 57, 59-60, 65, and 69 may be allowable over the Kumaki-Sebastian-Kawakita combination for independent reasons.

Claims 58 and 68 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Grover does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 56.

Claims 61-64 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Booth does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claim 56.

Claims 66-67 are also allowable over the Kumaki-Sebastian-Kawakita-Booth combination because Ejima does not address the deficiencies of Kumaki, Sebastian, and/or Kawakita as described above in the response to the rejection of claims 8-9 and 56.

Accordingly, claims 57-69 are allowable and the §103 rejection should be withdrawn.

Claim 70 recites:

> … the compression function including semantic information that is common to multiple records of the plurality of data records, the semantic information describing data in the multiple records;

> encoding the multiple records using the compression function to generate a data set that includes the data without the semantic information that is common to the multiple records;

> … the expansion function including the semantic information that is common to the multiple records; and …

As described above in the response to the rejection of claim 1, Kumaki only describes compressing a single string of byte data and Sebastian only describes that data components of a single source data structure are parsed into blocks and then compressed. There is no indication in Kumaki or Sebastian of a compression function including semantic information that is common to multiple records, as recited in claim 70.

Further, Kawakita only describes that the software for decompressing the compressed data is attached to the edited and compressed data. There is no indication that the software for decompressing the compressed data in Kawakita includes semantic information that is common to the multiple records, as recited in claim 70.

Kumaki, Sebastian, and/or Kawakita do not teach or suggest a compression function including semantic information that is common to multiple records, or an expansion function including the semantic information that is common to the multiple records. Accordingly, claim 70 is allowable over the Kumaki-Sebastian-

Kawakita combination, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claim 72 is allowable by virtue of its dependency upon claim 70. Accordingly, claim 72 is allowable and the §103 rejection should be withdrawn.

Conclusion

Pending claims 1-9, 11-25, 27-29, 31-34, 36-38, 40-41, 43-70, and 72 are in condition for allowance. Applicant respectfully requests issuance of the subject application. If any issues remain that preclude issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

Dated: Feb 1, 2006   By: _____

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